

IN THE CLAIMS

1. (Currently amended) An infrared communications system comprising:
a multi-beam transmitter ~~for that producing~~ produces an array of diffusing spots
upon a reflecting surface; and
a receiver comprising a plurality of receiving elements;
wherein each said receiving element has an independent field of view that is in a
line of sight of at least one of said diffusing spots.
2. (Original) The communications system of claim 1, wherein said reflecting
surface is a ceiling of a room.
3. (Original) The communications system of claim 1, wherein said array is in
the form of a regular grid.
4. (Original) The communications system of claim 3, wherein said grid of
diffusing spots is formed via the emission from said transmitter of a plurality of
collimated beams of equal intensity.
5. (Original) The communications system of claim 1, wherein said diffusing
spots are approximately equidistantly positioned from one another.
6. (Original) The communications system of claim 1, wherein the transmitter
comprises a light source, collimating optics, and a spot array generator.
7. (Original) The communications system of claim 6, wherein the spot array
generator is a holographic optical element.
8. (Currently amended) The communications system of claim 1, wherein
each said receiving element comprises a band-pass filter, a concentrator and a
photodetector.
9. (Original) The communications system of claim 1, wherein each said
receiving element is aimed in a different direction.
10. (Original) The communications system of claim 1, wherein said receiver is
a multi-branch receiver.
11. (Original) The communications system of claim 1, wherein each said
receiving element comprises a curved holographic mirror.

12. (Currently amended) A method of infrared communications comprising:
using a multi-beam transmitter to produce ~~producing~~ an array of diffusing spots
upon a reflecting surface; and
using a receiver that comprises a plurality of receiving elements to receive
signals from at least one of said diffusing spots through ~~a plurality of said~~
receiving elements, wherein each said receiving element has an independent
field of view that is in a line of sight of at least one of said diffusing spots.
13. (Original) The method of infrared communication of claim 12, wherein said
reflecting surface is a ceiling of a room.
14. (Original) The method of infrared communication of claim 12, wherein said
array is in the form of a regular grid.
15. (Original) The method of infrared communication of claim 14, wherein said
grid of diffusing spots is formed via the emission from said transmitter of a
plurality of collimated beams of equal intensity.
16. (Original) The method of infrared communication of claim 12, wherein said
diffusing spots are approximately equidistantly positioned from one another.
17. (Original) The method of infrared communication of claim 12, wherein
each said receiving element is aimed in a different direction.